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BOARD OF MANAGEMENT.

THE USUAL MONTHLY MEETING OF THE BOARD OF MANAGEMENT OF THE JAMAICA AGRICULTURAL SOCIETY was held at the Office of the Society, 82, Hanover Street, on Thursday, 25th April, 1907, at 11.30 a.m.; present: Hon. W. Fawcett, Deputy Chairman, presiding; Hons. L. J. Bertram, Dr. Pringle and H. T. Ronaldson; Messrs. D. Campbell, C. A. T. Fursdon, R. H. Hotchkin, and the Secretary, John Barclay.

Apologies for Absence.—Apologies for absence were read from Mr. J. R. Williams, Mr. Joseph Shore, and Mr. R. Craig.

Minutes.—The Minutes of the last meeting having been printed and placed before the meeting were taken as read and confirmed.

Matters arising out of the minutes:—

1.—Time of Meeting.—The Secretary stated that as instructed he had written the Railway asking if the alteration in the Time Table of the Port Antonio section was likely to be permanent, and the reply was that the alterations were under consideration. Since then the time had been changed so that the train from that section arrived at 11.20, and if the meetings of the Board were fixed at 11.45 it would leave time for the members travelling by that train to be in time for the meeting of the Board.

It was agreed to fix the time of meeting at 11.45 in future instead of 11.30.

2.—Prize Holdings Competition.—The Secretary reported that the following arrangements had been made for the distribution of prizes won by competitors:—

St. Ann.—Claremont, Saturday, 27th April, at noon.
Brown's Town, Wednesday, 8th May, at 12 noon or 4 pm.
Watt Town, Thursday, 9th May, at 4 p.m. The Deputy Chairman expects to be at both of these Meetings.

Trelawny.—Albert Town, Friday, May 10th, at 2 p.m. The Secretary hopes to arrange to be at this meeting.

Falmouth, Saturday, May 11th, at 2 p.m. The Hon. L. C. Shirley has consented to take the chair.

The arrangements are not yet fully made for the distribution of prizes in Manchester, but this will take place at Mandeville as soon as possible.

3.—Arrangement for Instructors.—The Secretary read the following letter from the Colonial Secretary's Office :—

No. 3284-3580. 9th April, 1907.

" In continuation of my letter No. 127-12663 of the 7th January, 1907, I am directed to inform you that the Government has been informed by the Crown Agents that in making the payment of the subsidy to Messrs. Elder, Dempster and Company, at the beginning of the quarter ending 31st March, 1907, the Crown Agents have arranged for the deduction of the sum of £875, being the amount due for Agricultural Instructors at the rate of £500 per annum from the 4th of April, 1905, to the 4th January, 1907."

The Secretary said there was no real contradiction between the £1,000 they had calculated to be available, and the amount per Colonial Secretary's letter, but they had calculated the amount to 31st March, while the amount deducted so far was to 4th January last. The balance of £125 for the three months, however, was available. He had circulated to the Instructors Committee a statement showing the full amount available until the end of the Elder Dempster Contract, and suggesting how the amount accumulated could be utilised for further instruction, spread over four years, three years or two years.

It was decided not to settle the matter until the new Governor, Mr. Olivier, arrived, who had previously taken so keen an interest in the matter of Instructors, and meantime the Secretary was instructed to circulate his statement to every member of the Board for his information.

4.—Bulls.—The Secretary read letter from Mr. A. M. Lewis refusing to deliver the bull to Mr. Muirhead as asked. He contended that he had in no way deviated from or broken any of the terms or conditions under which the bull was sent to him, nor had the time yet expired for handing over the bull to the Society.

The Secretary said he had informed Mr. Lewis that the breach of agreement consisted in his not facilitating outside services by the bull, as he had refused to have his name associated with the matter in the Society's usual way of advertising by means of placards through the parish.

It was decided to have the usual placards printed and posted through the parish stating that the bull was standing for service at Brumalia Pen, Mandeville.

The Secretary also submitted the following letter from the Colonial Secretary :—

No. 2766 3595. 25th March, 1907.

" I am directed to acknowledge the receipt of your letter No. 3863, of the 14th inst. in which you ask that the sum of £15 11s. 6d. paid to the late Dr.

Gibb for keeping the two bulls presented by Sir Alfred Jones to the Governor may be refunded to the Society.

2.—It is understood that as £5 of your vote is already allocated for this purpose the balance required is £10 11s. 6d., and I am to say that the Governor considers that the Society should endeavour to meet from fees for the use of these bulls, so much of this amount as cannot be covered by savings on other items of your vote for the current year."

ROBT. JOHNSTONE, Asst. Col. Sec.

He was directed to reply that these bulls were not the property of the Society, but were being taken care of by them for the Government, and they could not pay any expenses out of their already restricted vote. Any savings made on the previous year's estimates they would require for extraordinary expenditure for the current year.

The Secretary reported that the King's bull "Desmond," in care of Mr. Mills, Dove Hall, Bog Walk, was reported in good health, but he had not received any outside cows for service yet; that the stallion "Sir Gerald" had received five mares, but that the drought was keeping back people from sending mares; that the King's Hereford bull was still at Knockalva, and that there were no applications for his services.

Mr. Fursdon said there must be something wrong with the arrangements when nobody seemed to take advantage of these bulls services.

The Secretary stated that the two imported Shorthorn bulls would earn fees this season, but he had not received fees from the King's Hereford bull or the King's Shorthorn bull. The latter had not been in good condition, and was slow to serve. At Mr. Ventresse's dairy, however, at Half-way Tree, there were four fine calves by him out of imported Shorthorn cows.

Mr. Fursdon said that the King's Hereford bull certainly had got fine stock at Latium, Knockalva, and Kew Park Pens, but the bull had seemed only to circulate between these pens.

Dr. Pringle said that these bulls would ultimately pay the Colony as the blood was being disseminated, and young bulls would be available here while there was likely also to be a good demand for them from abroad.

5.—Sale of Unwholesome Meat.—The following letter was read from Mr. Fursdon to whom the Secretary said he had referred the Colonial Secretary's letter published in last minutes :—

Barbican, Half-way Tree, P.O., 8th April, 1907.

I have yours of 21st ult., *re* the sale of unwholesome meat, and copies of the correspondence on the subject. I hope these letters will be kept on file as they may be of use at a later date.

I do not think that paragraph three of Colonial Secretary's letter to you is worthy of serious reply. I have never entertained the idea of having appointed places of slaughter all over the island, including every estate, but only in the towns.

I note by Inspector General's letter that "scraps" of meat are sold at the Slaughter House on Sundays. He does not refer to my suggestion that it is possible to distribute unwholesome livers during the week.

The old quaker told his son that he would be very much surprised to find

how many things he could do and still be honest in the eyes of the law, and it would appear that our local conditions are somewhat similar. I think sufficient attention has been called to the subject, and we may look for improvement.

C. A. T. FURSDON.

Mr. Fursdon stated that as this very unsatisfactory matter had now been called attention to he hoped there would be some improvement, but the Secretary should file the correspondence to be brought up later, if necessary.

The Secretary submitted the following letters from the Colonial Secretary's Office :—

A.—Re Inspection of fruit accomodation on the S?S. "Port Antonio" March 14th, and "Port Royal," March 25th.—The Harbourmaster, Mr. Charlton Thompson, reported that as a result of his inspection he was of opinion that Clause 9, of the Elder Dempster Contract had been complied with on these visits.

B.—Circular Despatch from the Secretary of State for the Colonies.

No. 26-88. 30th March, 1907.

"I am directed to enclose a copy of a Circular Despatch from the Secretary of State for the Colonies on the subject of veterinary matters and the appointment of Veterinary Surgeons in the Colonies, and I am to say that the Governor would be glad to be placed in possession of the views of your Society on the points referred to by Lord Elgin."

H. CLARENCE BOURNE, Col. Sec.

Downing Street, 26th February, 1907.

SIR,—My attention has been called to the desirability of putting veterinary matters in certain of the Crown Colonies and Protectorates on a better footing, and I have been in consultation with the Board of Agriculture and Fisheries with a view to seeing what steps can be taken in this direction.

2.—The ravages caused by disease among animals have been specially marked in South Africa, but the subject is scarcely a matter of less importance in the British Colonies and Protectorates in East and West Africa, where domestic animals are urgently required for food and transport purposes, but where, owing to the prevalence of the animal plagues peculiar to the tropics, they are exposed to great risks and in some cases are unable to exist at all. In other tropical Colonies also the domestic animals form a valuable asset, and serious loss may be caused at any moment by the introduction of disease, as happened recently in the case of Mauritius.

3.—I would ask the Governments of the Crown Colonies and Protectorates which are interested in this question to take into their consideration the following points, which have been suggested to me by the Board of Agriculture and Fisheries.

4.—In a country where animal diseases are indigenous, one of the first steps to be taken is to obtain at the earliest possible moment an accurate knowledge of them, and to guard against the introduction of fresh diseases by means of imported stock.

5.—In as much as these indigenous diseases are often more or less confined to particular localities, the ordinary training obtained at home does not qualify a Veterinary graduate to deal with them unless he has had a supplementary training as investigator, and further, it is not so much essential that he should be skilled in the ordinary art of healing as that he should have an intimate knowledge of legislative and preventive medicine, including such an intimate knowledge of

the subject of serum therapeutics as will enable him to devise modifications of known methods of immunisation which will be applicable to the diseases of the country.

6.—The fact that seniority of service generally entitles men to hold the most responsible posts, renders it of importance that only competent men should be obtained for the junior appointments of the Veterinary Department of a Colony, and it must be borne in mind that when once a man has entered the Colonial Service it is difficult to supplement any defects in his training by further instruction in this country or elsewhere.

7.—In these circumstances it appears desirable to encourage some of the best qualified men to accept service in the Colonies, a step which, under existing conditions, they are unwilling to take owing to the better prospects at home.

8.—You will have learnt from my circular of the 4th of March, 1904, that a practical course of instruction in pathology and bacteriology of animals adapted to meet the requirements of the whole Empire has been established at the Royal Veterinary College, and, as the instruction is given personally by Sir J. McFadyean, it will be recognised that adequate arrangements have been made for the preliminary instruction of Veterinary Officers desirous of entering the Colonial Service.

9.—The Civil Service Commissioners have recently undertaken to examine Veterinary Officers before they are appointed to the permanent staff of the Board of Agriculture and Fisheries. The subjects prescribed for the post of Veterinary Inspector under the Board are contained in the syllabus of which a copy is enclosed, and it seems to me desirable that a similar standard of examination should be adopted in respect to veterinary appointments in the Crown Colonies and Protectorates.

10.—If the Crown Colonies and Protectorates concerned concur in the suggestion, I will approach the Civil Service Commissioners with a view to making the necessary arrangements. Should no difficulty arise in this direction, the procedure which I propose to adopt is as follows. The general non-professional qualifications of applicants for veterinary appointments in the Crown Colonies, and Protectorates will be considered in the first instance, at the time of the receipt of such applications, and after consultation with the Board of Agriculture and Fisheries, a list of *primâ facie* suitable candidates will be submitted from time to time to the Civil Service Commissioners in order that the professional qualifications of the selected candidates may be tested by an examination in the prescribed syllabus. A further list would thus be formed of those who had passed the prescribed examination, and, in the event of any veterinary appointment requiring to be made at any future time in urgent circumstances, the selection of a suitable Veterinary Surgeon would be facilitated.

11.—If this system is to work satisfactorily, it is essential that a reasonable number of appointments should be available every year, and I should therefore be glad to learn whether, in the event of your Government requiring Veterinary Officers for the higher ranks of its Veterinary Department, it would be willing to take them from the list referred to above. It is also essential that adequate salaries should be offered, and, although it is difficult to lay down any fixed scale in view of the great difference in the conditions of service in the various Colonies, I may say at once that it seems impossible at present to obtain competent men for first appointment as junior Veterinary Officers in fairly healthy Colonies at a smaller salary than £350 or £400 per year.

12.—In the preceding paragraphs I have outlined a scheme which, if adopted by the Colonies and Protectorates interested in this question, will no doubt lead to a great improvement in their Veterinary Departments. This would be an important advance towards the solution of the veterinary problems in those possessions, but it is also necessary to consider what steps should be taken to organize veterinary research work in the same countries.

13.—In South Africa adequate provision has been made for research work as regards both equipment and personnel, and many of the results attained there will be of great value to other Colonies where similar animal diseases are rife.

14.—In the West African Colonies and Protectorates there are no Veterinary Departments at present, but Veterinary Surveys are now being made in some of them by experts under the direction of the Board of Agriculture and Fisheries, who possess in Mr. Stewart Stockman, their Chief Veterinary Officer, an expert who, by reason of his service in the Civil Veterinary Department of India and as Chief Veterinary Officer in the Transvaal, is eminently fitted to advise in matters of this kind.

15.—In British East Africa a Veterinary bacteriologist has been appointed to the Veterinary Department of the Protectorate, and has just completed a course of instruction in the Transvaal Veterinary laboratories under Dr. Theiler. He will now proceed to make a veterinary survey of the Protectorate and also (it is hoped) of the adjoining Uganda Protectorate.

16.—When the reports of these different experts have been received, it will no doubt be found that some animal diseases are common to the British Possessions both in East and West Africa, and, as it will be to the interest of all that they should be further investigated with a view to discovering cures or devising preventive measures, it will be possible to share the expense and so facilitate the investigations. I may add that probably arrangements could be made by which some, at any rate, of these investigations would be carried out by the Board of Agriculture and Fisheries, under the immediate supervision of Mr. Stockman.

17.—With regard to the other Colonies which are interested in the Veterinary question, I shall be glad to consult the Board of Agriculture and Fisheries as to the best course to be taken for the discovery of the cause and cure of the local animal diseases, if I am furnished, as far as possible, with details as to the nature of the diseases, the qualifications of the Officers at present available for their investigation, and similar information.

I have the honour to be, Sir,

Your most obedient, humble servant, ELGIN.

BOARD OF AGRICULTURE AND FISHERIES.

VETERINARY INSPECTORS.

SUBJECTS OF EXAMINATION.

1. Pathology and Bacteriology.
2. *The disease of Animals Acts, 1894 to 1903, and any Act amending the same: and the Orders of the Board of Agriculture and Fisheries thereunder.

In subject 1 there will be a Practical as well as a Written Examination.

Candidates must pass to the satisfaction of the Civil Service Commissioners in both these subjects.

SYLLABUS OF THE EXAMINATION IN PATHOLOGY AND BACTERIOLOGY.

A. WRITTEN EXAMINATION.

(1) GENERAL PATHOLOGY.

Inflammation. The Degenerations and Infiltrations. Neoplasms.

*The orders referred to are contained in the latest Edition of the "Handbook of the Diseases of Animals Acts, etc.," printed for His Majesty's Stationery Office, and to be purchased from WYMAN AND SONS, LTD., Fetter Lane, London, E.C. The latest Edition is at present that of 1906, but it may be from time to time supplemented by later Orders, copies of which can be obtained gratis on application to the Secretary, Board of Agriculture and Fisheries, 4, Whitehall Place, London, S.W.

(2) BACTERIOLOGY.

Bacteriological Methods. Principles of Immunity and Vaccination; Disinfection. The bacteria pathogenic for the domesticated animals, including the morbid anatomy and histology of the lesions which they produce, and the methods whereby certain diseases are communicated from animals to human beings.

(3) PROTOZOOLOGY.

General biology of the pathogenic protozoa. The Coccidioses, Trypanosomiases, Piroplasmoses, of the domesticated animals.

(4) EPIZOOTIOLOGY.

The etiology, symptomatology, and differential diagnosis, of the contagious diseases of animals.

B. PRACTICAL EXAMINATION.

Candidates will be tested with regard to their practical knowledge of bacteriological methods, and especially with regard to their ability to apply these in the diagnosis of the principal contagious diseases of the domesticated animals.

Limits of Age : 25 and 35 : with an extension up to 45 in the case of Assistant Veterinary Inspectors under the Board of Agriculture and Fisheries, who may have served continuously from a time when they were under 35 : and with the provision that members of the Military and Naval Services (whether commissioned or non-commissioned) may deduct from their actual age any time during which they may have served towards pension.

An Official nomination by the Board of Agriculture and Fisheries is required for this situation.

Civil Service Commission, London, W., July, 1906.

The Secretary was instructed to reply that the Society had already strongly recommended the appointment of a Government Veterinary Surgeon, and they considered Lord Elgin's despatch endorsed the position the Board took up in the matter.

The Secretary was instructed to send the following further resolution to the Colonial Secretary :—" That the Board recommends with reference to the letter from the Colonial Secretary enclosing despatch from the Secretary of State for the Colonies *re* the employment of Government Veterinary Surgeon in the Colonies, that the Government should make provision for the employment of a Veterinary Surgeon with qualifications as required by the Board of Agriculture and Fisheries, as set forth in the Schedule to Lord Elgin's Despatch, at a salary not exceeding £300 per annum with fees for private practice, such fees to be arranged at reasonable rates."

C.—Re Destruction of Rats.—Referring letters from the Ratin Laboratory, 17, Gracechurch Street, London, enclosing recommendations from the Minister of Agriculture at Berlin, and with Minute from the Superintending Medical Officer stating that he would send a requisition for Ratin when next sending for drugs through the Crown Agents.

The Secretary was instructed to write the Ratin Laboratory for samples to be sent for test here as it was desirable if possible to find a more virulent Virus than those now being used.

Dr. Pringle stated that he had not found the Virus sold here, to have any effect.

Mr. Campbell said he used Virus regularly and found it very effective as a rule, though sometimes it failed.

The Secretary explained that it ought to be kept cool and must be fairly fresh; heat destroyed the vitality of the culture, and this was he thought the cause of its failure.

Mr. Bertram said the Secretary should ask the people preparing the Virus to stamp the date of issue on the tubes. He also asked what had become of the Virus offered by the Mexican Government some time ago.

The Secretary said that the subject of the Mexican Rat Virus had been dealt with by the Board of Agriculture and the Chemist had promised to get a supply and have it tested. That was in 1905, and he would now write him and find out what had been done.

He was directed to forward Mr. Bertram's suggestion as to stamping date of the preparation on the tubes, and to write the Ratin Laboratory and ask for samples of their preparation to be sent for experiment.

D.—Re Importation of Pigs.

No. 3784-3655. 22nd April, 1907.

"With reference to your letter No. 3910, dated the 21st March, 1907, I am directed to transmit to you herewith, for the information of the Jamaica Agricultural Society, a copy of an order by the Governor in Privy Council in regard to the importation into Jamaica of swine from the United States or Canada.

2.—I am to ask you to be so good as to make the terms of this order known to the Bureau of Animal Industry, Department of Agriculture in Washington, D.C., U.S.A., (with which Bureau you have been in communication) and also to the similar Department in Canada.

H. CLARENCE BOURNE, Col. Sec.

Order by the Governor in Privy Council under section 6, section 7, sub-section 14 and section 13, sub-section (1) of Law 24 of 1890.

In pursuance of the powers conferred on him by the above-named sections of Law 24 of 1890 and of any and every other power in any wise enabling him in that behalf, the Governor in Privy Council hereby revokes the Order made by him in Privy Council on the 8th day of January, 1904, which prohibited until further order the landing in Jamaica of Swine from any part of the Continent of North America, and hereby in Privy Council orders that from and after the date of this Order no Swine imported from the United States of North America or from any part of the Dominion of Canada which are unaccompanied by a clean bill of health shall be admitted into this Island, and Swine which are accompanied by a clean bill of health shall be subject to the conditions laid down by the Cattle Quarantine Law 1890, and of any Laws amending the same, and regulations framed thereunder.

Dated this 10th day of April, 1907.

G. M. WORTLEY, Clerk Privy Council.

E.—Re Brussels Sugar Convention.—Enclosing report of the proceedings of the International Sugar Commission, for the information of the Board.

In this connection the Secretary also read letter from the Barbados Agricultural Society advising that the Legislature of Barbados had appointed a Committee to draft a petition to His Majesty the King in Council on the subject of the contemplated denunciation of the Brussels Convention, and that the Society intend sending an address with certain resolutions passed by them, to the Secretary of State for the Colonies, and desiring to know if the Agricultural Society would join them in the movement to urge upon the Secretary of State for the Colonies the disastrous effects that would follow on the denunciation of the Convention.

The Secretary was instructed to reply that the Society would join heartily in the petition, and he was instructed to ask the Barbados Society for a copy of the Resolution, and to take steps to join in the petition.

Ramie and Banana Fibre.—The Secretary submitted the following letter *re* Ramie and Banana Fibre ;—

Stranmellis Gardens, Belfast, 16th March, 1907.

I am much obliged for your letter of 23rd ult., and have carefully noted contents. You specially refer to Ramie, and can only say I consider you look at the fibre with clear insight as very few fibres approach it. You also say, "we have no proper machine for treating the banana fibre, any more than we have for Ramie." Now from actual knowledge, the Ramie plant has been successfully handled, is used for fibre. I also enclose a corroboration, specimen of sliver ready for spinning, which if I may say, speaks for itself. Now, let me ask, is it feasible to send on a carriage paid (free) sample of banana stems, such as could be tested on a machine for purpose if possible utilizing in order to obtain fibre, I assume, Sir Alfred Jones' line of steamers would under the circumstances be pleased to forward free, seeing this gentleman is greatly interested in anything pertaining to welfare of Jamaica. You may know of other specialties, if so please inform.

F. D. WOODS.

He was instructed to thank Mr. Woods for his interest and arrange to send specimens of the stems of bananas.

The Secretary stated that the Agent of the Direct Line had promised to carry the samples free to Bristol, and Messrs. Elder, Dempster & Company there would attend to the forwarding to Belfast.

Mr. Hotchkin and Dr. Pringle promised to supply the banana stems if free freight on the Railway was given.

The Secretary was instructed to ask for this,—send the samples and duly report.

Instructors' Reports.—The Secretary submitted the Instructors' Reports.

He stated that Mr. H. D. D. Mennell, Instructor for Hanover and Westmoreland had been ill since the 22nd of March, and had send on a certificate from Dr. McCatty, dated the 18th April, advising that he should receive two months leave of absence.

The Secretary was instructed to reply that the Board regretted to hear of his illness, but as he had only been six months in the service of the Society they could grant him leave of absence only if he could make arrangements for the fulfilment of his duties, and to ask Mr. Mennell what proposals he could make for doing this.

It was left to the Secretary to make arrangements for the fulfilment of Mr. Mennell's duties if he remained too ill to carry them through.

The Secretary also said that Mr. Arnett had written that the arrangement for him to take Upper Clarendon was only a provisional one, and as his district was so large he could not cover it. He would, however, be willing to take the fifth day of the week usually devoted to correspondence, to outside work if the Board would allow him £50 more per annum.

The matter was held over until the Instructors matter could be settled.

New Members.—The following new members were elected :—

Messrs. Campbell Maxwell, St. Jago, Toll Gate P.O.; Adair Stewart, Newport P.O.; D. A. Tucker, Clerk of Courts, Falmouth P.O.; Conrad Watson, Race Course P.O.; J. H. E. Hemans, Hampton, Bog Walk P.O.

The Meeting adjourned to Thursday, —rd May, at 11.45 a.m.

MANURES.

IN the Report of Messrs. Cradwick and Arnett, the Agricultural Instructors who were the Judges in the Prize Holdings Competition in Trelawny, they remarked on the fine Criollo Cocoa trees they found growing in the Worsop district of Upper Trelawny, and especially on the fine bearing of some that were manured with old cane trash. All through certain districts in Jamaica there are stretches of sugar cane grown by small settlers, who have little cane mills where they make 'Head' and 'Wet' Sugar. Around these mills are generally to be seen piles of cane trash, some of it very old and decayed, which is too often allowed to go absolutely to waste. There is also round about the furnaces a large quantity of wood-ashes, the accumulation of years, trampled down. There is here what we cannot describe by any other term than *wicked* waste. The owners, if they have coffee or cocoa or yams, or in fact any other crop than cane, often complain of the effects of dry weather, or the small bearing because of the soil becoming poor, and yet they have at hand trampled under foot such material as can be a safe-guard against the dry weather, and a safe-guard against poor bearing. There are no better manures in the world than these two things—cane trash and wood-ashes. These waste materials properly used are not only a safe-guard against drought and poor bearing, but *a safe-guard against competition.* For instance, what is the greatest competitor of coffee ? It is tea, which comes from China, India

and Ceylon. In China they have been cultivating tea for centuries, whereas there are very few coffee plantations here which may be written of as existing for scores of years. But in Japan and China there is nothing allowed to go to waste that may be applied for profit. We quote again the humorous little tale told by a correspondent of ours who wrote of ginger-growing in Japan. Japan Ginger is becoming rather a serious competitor of our ginger in spite of the extreme economy of land they are obliged to observe there, and the straits they are in for manure. We quote from page 89 of the "Journal" for January, 1903 :—"The natives (Japanese) do not go in much for phosphates, on account of their cost, using stable manure prepared with sea sand, human manure prepared in the same way, and fish and other stuffs. Human manure is in great use, but owing to the very nearly vegetable food of the people it is not of great value. Horses, pigs, fowls, etc., are kept solely as manure producing sources, and they are now beginning to treat grass with layers of lime to make a compost. Where there is seaweed I daresay they use it, but there is none in this locality. So careful are they not to lose a chance of obtaining manure, that it is common to see along the roads at the edges of the fields little sheds, and inside a bucket in order to invite the passer-by to relieve himself of a superfluity, useful to his neighbour. At least that is my interpretation of the arrangement, which I have never discussed with anyone, to be sure, it is certainly not in the interest of decency as we understand the words, as the Japanese is a simple child of nature."

In China the tea plants are producing as much to-day as they ever produced, although they have been cultivated for centuries—through the constant addition of manures, and these manures simply house and yard materials which we here throw away or destroy. On large plantations it is difficult to get manure to the extent necessary, but small settlers are really well off in that direction. Cane trash spread through bananas, cocoa and coffee, not only destroys weeds and prevents them growing, but keeps the land cool and soft and moist, while every shower of rain that falls carries down to the roots of the trees' food material which soon shows a difference in larger bunches of bananas and larger crops of cocoa pods and coffee berries from the same area of land. Not only can it be used on these crops, but it can be spread through the yams where the unshaded land so readily bakes in dry weather and affects the bearing.

Speaking of cane trash and ginger brings to mind some experiments which were carried through several years ago in ginger-growing. We quote again from an old "Journal," page 119, of April, 1898 :—"Mr. Jonathan Allen of this place (Christiana) planted one-fifth of an acre of Ginger, forked and manured with rotten cane trash, which gave a return never yet heard of,—four barrels of plants gave seven barrels of "Cured Ginger," "fine quality" and about eight barrels of plants. The four barrels of ginger he planted weighed about 450lbs., worth 28s.; he has reaped seven barrels cured ginger

weighing about 850lbs., worth here to-day, 50s. per 100lbs., and eight barrels plants, 950lbs., 66s., one-fifth of an acre.

Now the prices for ginger are very favourable this year, not only because crops have been short through many having given up the growing of this product because of the low prices which have prevailed for some years back, but also because it has been the more careful men who kept steadily on and so produced good ginger and made it pay. Now that there is little of the same virgin land available that small ginger growers used to be able to occupy, and land has been cultivated again and again in this crop must again be used, the question of manuring the land for the ginger crop with the material at hand such as cane trash and animal droppings should be brought home to every small settler who grows ginger. It is better to have a small plot highly manured and producing good fat ginger, than to plant over a larger area of poor soil which will be only half cultivated and half-weeded. Now that the practice of keeping live stock is being generally adopted by small settlers outside of the old stock-keeping parishes where they always have kept stock—there could always be a constant supply of manure if the animals were stabled or penned. To be sure, in South Manchester and in the drier parts of St. Elizabeth, and on the poorer red soils of St. Ann, small settlers have been for years back successfully pursuing the practice of fly-penning land with stock, and have been much encouraged in this practice by our Instructors. Possibly in fits of depression they might even have thrown up this practice and relapsed into migratory practices in agriculture but for the encouragement they have received. The cultivation of old roadside lands on the holdings by fly-penning has largely increased to our knowledge in St. Ann, but we would like to see it prevailing more in St. Elizabeth, where it is not done we think to the extent it is in South Manchester and St. Ann. In every Prize Holdings Competition, Instructors have commented on this, that on the poorest lands and in districts where they suffer often from drought, are to be found the finest cultivations. The highest points in the Competition are always won in South Manchester. They are the people who have to struggle with nature. In North Manchester the seasons are better, the rainfall is regular, and the soil is much richer ; that is through not having been cultivated for such a long period. But there we find the people are much more careless and shiftless in their agriculture. They are not richer in spite of a more kindly nature. Yet if they applied the same industry and the same methods to anything like the extent that is done in the harder districts they would be exceedingly well off. As a matter of fact their coffee is as a rule poorer looking in every respect ; their yams are no better —in fact not even so good, their horses poorer.

Settlers may keep poultry, rabbits, goats, pigs, cows, a donkey, one or more mules and a horse ; if the manure from all or any of these animals housed at night, or at any rate penned, was gathered and applied to the land crops could be doubled without the expendi-

ture of very much labour. But we see cultivators simply wading in the wasting manure, while over the fence there are coffee trees betraying signs of semi-starvation, and bananas in sight not yielding "straight" bunches, and looking yellow from the drought. The same manure carried 50 yards sometimes and spread through the coffee and the bananas would have made the coffee trees show an abundant foliage of glorious green leaves, could have prevented the land drying up hard among the bananas, and made them show large handsome bunches, just the kind that we want so much now in the stiff competition between the Jamaican and Costa Rican bananas.

It is only too true, as was once remarked by one of the keenest of agricultural observers, that a labourer without a cow or anything particular belonging to him, or attainable, except a large and badly-fed family, will soon acquire an ill-conditioned mind. A cow may thus become something more than a mere source of health and profit ; indirectly, she may act as a moral agent of no mean value. This is not the least interesting aspect of a very important subject.

In California a great reputation has been won in fruit growing in some of the more important valleys where the rainfall is not above 15 inches per annum. For example, it is only yesterday that irrigation was introduced into the great Sacremento and Santa Clara valleys; yet long before that time splendid crops had been raised by dry farming. In this matter the State of California may justly claim to be the pioneer. For many years it was not believed that anything could be grown without irrigation. Men do not yet understand the great depth of soil in the dry regions ; nor do they realise that Providence has provided arid lands with an almost inexhaustible fertility. But such is the lesson of History. The oldest civilizations have been developed in arid regions. Dry land farming has been practised since the dawn of civilzation in Mesopotania, in Egypt, and North Western India. Nor can it be doubted that the great depth of arid soils which gives from three to five times the amount of soil in the same area as in humid climates is one of the prime causes which enabled the ancient agriculturists to remain in the same country and for such measureless periods without being acqainted with our modern methods of soil improvement. It is notorious that the roots of plants are found to penetrate in dry regions to a much greater depth than they do in humid regions. And if the roots can penetrate so surely must both water and air.—*Transvaal Agricultural Journal.*

COTTON NOTES.

Our Attempts.—In 1904 we began to pay serious attention to Cotton-growing. The Government received a grant of £100 from the British Cotton growing Association to encourage experiments in the growing of cotton, and the Association also sent out Egyptian and

Sea Island Cotton seed. Later they sent us as gifts one Steam Gin and four Hand Gins. Five pound grants were made for experimental acres grown in different parts of the Island in districts where an additional main crop would be of advantage. Several planters also put in larger cultivations. These cultivations were all very successful, and were so encouraging that in 1905 larger acreages were put in. In 1904 there had not been the slightest signs of any pests, but in the larger cultivations of 1905 the Cotton Worm put in an appearance. Before stocks of Paris Green could be procured the pest had such a hold that it became a very expensive matter to fight it, and in fact some of the cultivations had to be abandoned. If we had been provided with insecticides and had time to experiment with these before the pest got beyond control, and found which best suited our conditions, which probably is not Paris Green, but rather Arsenate of Lead, we would have been able to combat the pest on its first appearance on a large scale and get it under. But we were too sanguine with the fine results of our 1905 crops.

We had a visit from Mr. Oliver of the British Cotton Growing Association who tested samples from different parts of the island submitted to him, and priced them. The tests were very satisfactory. The cotton we produced in bulk and marketed, too, fetched fine prices, so that both in quantity and quality we were distinctly above the average of places producing Sea Island Cotton. Last year only a few planters cultivated Cotton and *there was not the slightest sign of an insect pest.* For years back we have remarked that there are caterpillar years when these pests not only have attacked cassava and other crops, but sometimes go on even to guinea grass, they are in such quantities. But nobody does anything to check them ; they disappear, and we see nothing of them again for several years. We have not observed so closely as to be able to name regular cycles or whether it is for four or five or six years, but we put it at five. But prospective cotton growers should like the grower of every other crop be careful and cautious, forewarned and fore-armed. He should provide himself with the materials to combat pests whenever they appear.

The growing of Sea Island Cotton has provided us with a fine crop for districts subject to drought. The price is high ; the market is a large one—no product that we grow has a larger outlet—in fact for all that Jamaica may grow we might say an unlimited market exists. The failure of one season should not daunt us, and we should begin again on a small scale if we cannot risk larger ventures. We are glad to say, however, that the visit of Sir Alfred Jones and party to Jamaica in January (although the trip was so sadly interrupted) has resulted in those members of the party interested in cotton being convinced that Jamaica is a good field for cotton-growing. We have level lands with rich soils ; districts dry enough for the cotton picking season, and—in spite of people who shake their heads and talk of the want of labour,—plenty of labour for cotton picking. But it will want organization.

This, however, to our mind, is quite feasible. Women, girls and boys are required for cotton-picking, and it would be a strange thing if they are not found here, for are not we constantly sending *men* to make railways and to work on plantations, from Mexico right down through Central America to Columbia ; yes, even to Ecuador and Peru, not to mention our next door neighbour Cuba. These are grown people, but their women and their children are left behind. Obviously therefore there is plenty of this kind of labour, but as had been stated if it does not exist on the exact spot on which the cotton plantations may be situated it will want some organisation to put it there. Earl Dudley has decided to put one of his estates here, New Yarmouth, in Vere, in Cotton, and has secured, on the recommendation of Sir Daniel Morris, as his Attorney, Mr. Conrad Watson, who was one of the pioneers of cotton-growing in Montserrat. Mr. Watson is now in Jamaica, and he is only waiting for the drought to break to commence operations. The Governor appointed him a member of the Board of Agriculture, in the room of the late Mr. Middleton, who was killed in the earthquake.

Besides Vere there are good cotton-growing districts in the lowlands of St. Elizabeth and on the sea-board of St. James, and in the dry parts of St. Thomas, while St. Andrew has been proved by results to be a typical place for cotton-growing.

Cotton Machinery.—The following useful information is given by the Vice-Chairman of the British Cotton-Growing Association:—" The best gins for Sea Island Cotton are single acting Marcarty gins, and for Egyptian and long stapled American, double acting Marcarthy gins. A double acting gin can, however, always be converted into a single acting by removing one of the knives. We should certainly not recommend putting down any saw gins unless you are growing the lower types of American Uplands, and we should advise you not to touch this class of cotton if you can grow the better varieties, as the difference in price is very great. You can obtain Marcarthy or saw gins either from Messrs. Platt Bros. & Co., Limited, Oldham ; Messrs. Asa Lees & Co., Limited, *Oldham ; or Messrs. Dobson & Barlow, Limited, Kay Street Works,* Bolton. What we generally do ourselves in the initial stages where only a small quantity of cotton is being grown is to put down a few hand Marcarthy gins and a hand baling press made by Messrs. Squire, Ashton & Sons, of Oldham, and which will pack a bale of 200lbs. The press costs about £25 here, the hand gins cost about £20 each. Where, however, power is available, it is better to put down a power Marcarthy gin. The production of a single action Marcarthy gin may be put at 30lbs. upwards of clean cotton per hour, and requires $1\frac{1}{4}$ p.h. per gin to drive.

RAMIE OR RHEA.

We promised in November Journal to give a full and practical article on the position of Ramie, and on the prospects of its growth as an industry. We prepared this and it would have appeared in the January Journal if that had not been destroyed in our printers establishment in the fire following the earthquake just when it was ready for issue, and unfortunately all our notes on the subject over a period of years (which the article had embodied) were not recovered from the ruins of the office. We cannot therefore at present reproduce the article.

The following paragraph from an article in "Tropical Life," however, furnishes us with sufficient text to make some remarks pertinent to the subject :—"Probably no other crop is so easy to grow and prepare for market. For a few shillings sufficient plants to stock a whole plantation can be established, and in a few months the crop is ready for cutting. The fibre is prepared by an exceedingly simple process, and the "ribbons" if properly dried can be stored for any length of time. When the time comes that the plantation is large enough to employ machinery for decorticating and degumming the plant is of the simplest and cheapest descripcription, and a Ramie decorticator can be purchased for about £50."

Now this is the kind of stuff which at once makes a practical planter suspicious of Ramie. It is so vague, so casual, so sanguine, —and it is mostly wrong. It would take considerably more than a few shillings to stock a whole plantation, and the supply of plants is so limited that a wait of one or two years till the experimental plots yield enough to supply a large plantation must be made. The crop is not ready in a few months. It takes nearly a year to establish plants sufficient to make a first cutting, then cuttings can be made about every four months. If the process is so simple and ift he mrchinery is of the simplest and cheapest description, why is it for the last ten years practically the whole of the warmer regions of the earth have been keeping their eye on Ramie, and yet no fields have been established and no large plants put down to deal with it. We are pretty much in the same position now as we were ten years ago, and this is simply because there has not been machinery available, simple and cheap, combined with effectiveness.

There were fields of Ramie tried in India both with and without irrigation. It was found that unless the soil was naturally rich or made rich with manure Ramie could not be grown good enough to be dealt with commercially, and the cost of manuring it, where manure was difficult or even impossible to obtain—as is the case in most tropical countries where stock is not housed—made it an unprofitable crop. The requirements of Ramie are—a rich soil, plenty of moisture, good cultivation, *i.e.*, keeping it quite clear of weeds.

Its cultivation, thus, is not quite so cheap as is made out. It will degenerate quickly if not kept clean, and the soil kept soft, the same as for any other crop. These are the deductions we have drawn from the one large commercial planting that has been made. Our advice is to those who are interested, by all means keep experimental plots of Ramie on hand, and be ready to plant out largely whenever it becomes feasible commercially to do so.

ONCE again the periodic boom in this fibre is upon us, and enquiries are coming in about it ; the position may be summed up briefly thus. The actual fibre of the Rhea, Ramie, of China grass plant is about the best, longest, and strongest fibre known, and could it be easily and cheaply produced, would of necessity supersede cotton in many fabrics. Unfortunately, there is a kind of gum in the stem which is very difficult to get rid of, and which much enhances the cost of preparation. The result is, of course, that people buy the cheaper articles of cotton or mercised cotton, though they may know well enough that the Rhea goods will last so much longer that they will more than repay the extra cost.

In the second place the plant, though it grows freely in Ceylon or Malaya needs a great deal of manure, if it is to continue to grow tall and not become short and almost useless. This adds a good deal to the cost of growing it. Again, the mills for spinning it are few and far between, and too poor to give really remunerative prices, and take large quantities, while the planter will not grow the fibre unless he can see a good market.

In actual fact, all who have tried Ramie in the tropics so far have lost money over it. It is one of the most difficult things to do, to introduce a new fibre. No one will buy it on the market unless it is as good and cheap as one of the already existing standard fibres unless it can be put there in guaranteed large quantities regularly ; while no one will grow it unless he can easily dispose of it in small quantities at a remunerative figure.

The price recently offered by the ramie mills and largely advertised as being a wonderful price calculated to make the planter rich beyond the dreams of avarice, was about 5s. a ton below the price at which it begins to be remunerative, and at that price any one growing the fibre would lose money.—J. C. WILLIS, in Ceylon "Tropical Agriculturist."

COCONUTS.—The *Tropical Agriculturist*, referring to the remarkable dearth of literature on the subject of coconuts, says :—"*The cultivation of this palm is continually extending in Ceylon,* Malaya, and other countries, but the consumption increases as rapidly, so that prices have not fallen ; in fact, they have of late risen in a remarkab nway. The scientific treatment of th coconut is only in its infacy, and there is therefore available very little accurate information as to most branches of its cultivation and harvesting. 'What kind of nut, for instance, gives, for each kind of soil, the

best results as to copra, oil, fibre, etc ? How many really distinct varieties are there ? To what extent can the qualities of any race be improved by selection ? What is the best distance apart to plant different varieties in different soils ? What is the manure for each kind of soil ? What is best way of making copra of uniform quality, fibre, oil, etc.? and many other questions.'

JAPANESE GINGER.—The following notes from a report of the Canadian commercial agent at Yokohama on the ginger industry of Japan may be of interest. It is stated that ginger is largely produced in Shiznoka prefecture and was first exported about twenty years ago. Owing to the deterioration of quality, the export almost entirely stopped. In recent years, however, by more skilled methods, the quality has much improved ; the export trade has revived and cultivation is carried on more extensively, with the prospect of rapid advancement. In 1905, the total area of land devoted to ginger in the prefecture was about 8,025 acres, which produced 2,833,333lbs., valued at about £19,120. The dried ginger is exported chiefly to the United States, some going to Europe and India. In Japan the demand for ginger is limited, the consumption not exceeding 40,000lbs. a year for medicinal purposes, in addition to a small quantity used for seasoning food. The producers in Shiznoka are said to be trying to improve the quality and quantity with a view to displacing West Indian and Cuban ginger on the foreign markets, but they have a difficult task before them.

STOCK NOTES.

Half-Bred Swiss Goats.—In accordance with a promise, Mr. F. Wolff, of Vosburg, forwards some particulars of the milking records of his half-bred Swiss Goats. He states they give—on an average presumably—four and a quarter, three and three quarters and three and a quarter bottles of milk daily. They were tested while running on ordinary veldt, but if stall-fed he is convinced they would give much more. The kids are now three months old and the flow of milk has fallen off very little since they were born. The kids, he adds, are quarter bred, so that there is a possibility that they may do better than their dams when their turn comes.—*Cape Agricultural Journal.*

A Prolific Cow.—We have a Shorthorn cow says a writer in *Farm, Field and Fireside,* which has given birth to three strong healthy calves at one birth this week. The cow and calves are all doing well and are very strong. I thought this might be interesting to some of your readers. I may add they are marked all the same. They are two bulls and one cow calf.

A Costly Collie.—Mr. W. Mason, of Southport, England, has

sold his champion collie, "Squire of of Tytton," for £1,250, to Mr. S. Uteryer, of New York. This is the largest sum ever paid for a collie, and nearly approaches the record price for a non-sporting dog, £1,000, for which the St. Bernard, "Sir Bedivere," was sold.

Calf Rearing.—We cannot have good bulls and cows without good calves. The proper raising of calves is fully as important as the proper management of the cows. They should be fed so abundantly that they will grow vigorously and continuously from birth to maturity. Our greatest danger of deterioration in the size of our cattle comes from the improper feeding and care of our calves. It is a sad truth that too many of our breeders do not have any real knowledge of calf raising. Their calves have a scrawny and ill-fed appearance that writes them down as careless or unintelligent stock raisers. You see nothing like this in Holland or Denmark. You frequently see a farmer with a good herd of cows well cared for while his calves, if he has any, are unthrifty and stunted for life. In many cases ignoronce is the real cause of this state of things. The truth of the matter is, that our dairymen are mostly engaged in milk production alone and many of them have lost the art of calf raising. And right here is the opportunity of the breeders of pure blooded stock.—*Hoard's Dairyman.*

The Ubiquitous Shorthorn.—The "ubiquitous Shorthorn," says Professor Primrose M'Connell, "is one of the most useful all-round animals of the cattle kind, and, perhaps, the breed in most universal use, while for dairying purposes it has come more and more into favour since the modern development of the new milk-trade. At the same time it is more than likely that the average Shorthorn man does not realise what his cow is capable of doing, or how much she may yet be improved. The average yield of milk of all the cows of the United Kingdom is put at 450 gallons per head per annum; an ordinary good dairy will run to over 600 where the cows are milked for, say, ten months. The British Dairy Farmers' Association some years ago fixed 850 for a registered Shorthorn, but now the Wye Agricultural College, in Kent, has graded up its herd of Shorthorns to 1,000 gallons per head per annum. It has been a common experience to come across individual cows of various breeds which gave much more even than this high figure, so that from these results one can judge of the possibilities of our animals, and their capabilities for development. We are pretty well assured now that by feeding we cannot control the quality of the milk, though we can influence the quantity, and that good feeding will thus produce more milk. On the other hand, feeding cannot be carried beyond a certain point in the way of developing the milk yield, while the poor yielding cow may need as much food as a better one. These thousand-gallon cows probably do not require more food or attention than the 500-gallon ones, so that we come back to the point that the power to yield a large

supply of milk is constitutional and that the development of this power can only be brought about by selecting the good animals, and keeping their progeny to carry on the power to the next generation, and intensify the same, if possible.

Aloes.—This medicine can usually be got at all dispensaries. It is usually sold in the form of a hard block unless asked for powdered. Powdered Barbadoes Aloes is exactly what to ask for. It is the best drench for a horse, and one ounce, which is equal to four tablespoonfuls, is the dose. It is to be used to clear the stomach and bowels of a horse when the animal looks bad, has rough hair in spite of grooming, eats well but does not thrive, or has a rumbling in its bowels. Put the powder in a pint bottle, add an ounce of ground ginger, pour hot water on until it is up to the neck, and let it stand five minutes, then shake well, and give to the horse when cool. Aloes cost 6d. an ounce in Kingston.

Castor Oil.—When Aloes cannot be got or are not at hand when a drench is required for a horse, one bare pint bottle full of Castor Oil may be used. Aloes are best used for horses and Epsom Salts for cattle, but Castor Oil is a good substitute for either. One full pint bottle is the dose for a full grown cow or horse, half-a-pint for a yearling, and two tablespoonsful for a young calf or goat over six months old, and one tablespoonful for a young calf, a dessert spoonful for a goat, half a tablespoonful for a dog, a good teaspoonful for a cat, half a teaspoonful for full grown fowl, and two drops only for a chicken. For large stock it is better used with an equal quantity of Sweet Oil, either Coconut Oil or Cotton Seed Oil. It is also good for a harness dressing if rubbed well in, and one pint mixed with two pints Kerosene Oil is an effective dressing for ticks and sores, failing cheaper remedies to be described further.

Linseed Oil.—This oil is not well known among small stock owners, but its place cannot be completely supplied by any other oil. It has its own particular curative action. It is used as a laxative, and is not so strong as Castor Oil, but stronger than Sweet oil. There are two forms of it sold—Raw Linseed Oil to be used for stock, and Boiled Linseed Oil commonly called Paint Oil. The latter is of no account in this connection (Stock). Raw Linseed Oil costs in Kingston 1s. a quart, 4s. a gallon. When a horse or cow looks very rough and is weak, but seems too sick for a drench of Aloes or Castor Oil, or when Turpentine or Jeyes Fluid has been used for worms, a pint of Linseed Oil is the best thing to give. Castor Oil is stronger and not so soothing in its action on the stomach and bowels of animals. For calves or cattle which cough, give one pint Linseed Oil with one tablespoonful Turpentine in it.

Coconut Oil.—Coconut Oil is very useful in the treatment of stock. In the treatment of cuts and sores it can be used with equal

parts of Castor Oil and Turpentine as a Healing Oil. A half pint of Coconut Oil in a pint bottle with four tablespoonsful of Turpentine, the remainder being filled up with Castor Oil, makes one of the best drenches for all kinds of worms in horses at any time. Linseed Oil is better for use with cows, but failing it, Coconut Oil is a good second to use for coughs and colds and debility. When calves under six months old are troubled with a husky cough, use a tablespoonful of Turpentine, to a half pint of Coconut oil. Between six months and a year use two tablespoonsful of Turpentine to half-pint of Coconut Oil and a half-pint Castor Oil. Whenever a good deal of Coconut Oil is used the coconuts should be bought by the hundred and the oil made at home. The refuse called locally the "trash," known commercially as "Poonac" is a very nutritious food for chickens, pigs, and indeed all stock.

Healing Oil.—One part Coconut Oil. One part Castor Oil. One part Turpentine.

Drench for Worms in Cows and Horses.—Half-pint Coconut Oil and four tablespoonsful Turpentine, fill up pint bottle with Castor Oil.

For pigs, sheep and goats.—Half the above.

TEXAS OR TICK FEVER AND ITS PREVENTION.

Texas Fever, a very serious obstacle to the cattle industry, has been fairly well understood since the investigations made n the States. The work showed conclusively that the cause of the disease was a minute parasite living within the blood cells, the intermediate stage of the development of which occurred in the cattle tick, thus making this tick the indirect but absolutely essential factor in the natural production of the disease.

Probably the best name to apply to the disease, since it can only be transmitted in nature by the tick Boophilus annulatus, is that of tick fever.

After the microscopic protozoan is injected into the blood of a susceptible animal it attacks the red blood cells, causing them to break down. The disease is characterized by high fever, by destruction of red corpuscles, and the consequent excretion of the colouring matter of the blood by the kidneys causing a reddish discoloration of the urine, by enlarged spleen, engorged liver, thick, flaky bile, more or less jaundice, emaciation, and death in from 10 per cent. of the chronic to 90 per cent. of the acute cases. The peculiarity about this disease is that the animals responsible for the spread of the malady are apparently healthy, although containing the protozoa in their blood, while those that become diseased do not, as a rule, convey the affection to others. In the few instances where they do, it is not by contact, but indirectly by means of the progeny of the ticks from the diseased animals. Infection is not transmitted by the air, urine, saliva, manure, or in any other natural manner than

by cattle tick. Texas fever was probably introduced into the United States with the importations of cattle by the Spaniards during the early colonization of Mexico and Southern United States.

Cause of the Disease.—The primary or direct cause of Texas fever is the microparasite belonging to the lowest form of animal life the protozoa. This minute parasite is found in the blood in every case of Texas fever, and by inoculating blood containing it into susceptible cattle, the disease can be invariably transmitted, thus proving its direct causative effect in the production of the malady. After gaining the circulation the protozoa undergo several stages of development. The parasites may occupy nearly one-fourth of the body of the red blood cells and, as can be readily understood, exert a detrimental influence upon them. The periphery of these blood cells becomes shrivelled or crumpled, and they finally break up, liberating the piraplasma, which may be observed as free bodies in the circulation most frequently in the kidneys. The stage of reproduction or multiplication of these protozoa has never been observed, but that it does occur is proved by the fact that inoculation of a small quantity of virulent blood into susceptible animals will give rise to the disease with myriads of parasites in the blood. The natural path of entrance of these protozoa, however, is by one channel only, namely, through the bite of the cattle tick. The length of time elapsing between the exposure of susceptible cattle to the cattle tick and the appearance of Texas fever among them is dependent upon the climate and the development of the ticks to which they are exposed. Texas fever may occur in from thirty to sixty days, as the females that drop from the cattle must lay eggs and these must hatch before the animal becomes infested with ticks and thereby inoculated with the disease. By artificially inoculating a cow under the skin or into a vein with virulent blood the disease may be produced in three to ten days.

Symptoms.—The symptoms of Texas fever present two distinct types, the acute and chronic, depending upon the time of the year the disease makes its appearance and the susceptibility of the animal attacked.

Acute Type.—In the acute form of the disease, the temperature rises within twenty-four to forty-eight hours to 107degs. or 108degs. F., and the animal rapidly show signs of being affected with a severe malady. It is depressed, leaves the herd, and lies down or stands of by itself with head lowered, ears dropped, feet drawn together, and back arched from the pain in the liver and kidneys. The muzzle is dry, the appetite lost, and rumination ceases. Constipation is always present during the first stages of the disease, but it frequently gives place later to diarrhea, and the manure is usually heavily stained with bile, and in rare cases may be mixed with blood. The number of respirations to from 50 to 93' while the pulse beat varies from 90 to 120 per minute. The changes which occur in both the urine and blood are extremely important,

but the urine will receive first consideration here, as it is more readily examined by the layman than the blood. The peculiarity of the urinary secretion is that it is blood stained, from which symptoms the disease has derived its name of "Red Water." The protozoa, in the circulation breaking the red corpuscles, liberating the substance hemoglobim, which is the coloring matter of the blood. The substance being free in the blood plasma is exreted by the kidneys, giving the urine its red colour. This discoloration of the urine is present in the majority of the acute cases, but it is frequently wanting in the chronic form of the disease. The color varies greatly from a mere pinkish tint to an almost black color depending on the rapidity of destruction of the red cells, and the excretion of the colouring matter through the kidneys into the urine. The blood furnishes great assistance in making a diagnosis of suspected Texas fever, the finding of the inbracellular parasite microscopically is conclusive evidence. This fluid, as it oozes from a small incision in the skin, is pale and watery, indicative of great reduction in the cellular element, and is readily seen to differ markedly from the normal red of the blood of healthy animals. Sometimes there is such a lack of blood in the vessels of the skin that a very deep incision has to be made in order to obtain sufficient blood for inspection. It is also at times noted that the power of the blood to coagulate is so reduced that when it once starts to flow it is only after a considerable time—or by applying pressure—that the hæmorrhage is stopped. In the majority of cases, however, the tendency of the blood to clot is unaffected.

Cerebral symptoms are noticed in a certain percentage of cases, manifesting themselves in the form of staggering gait, disturbances of vision or delirium. There is in milch cows a reduction or a complete stopping of the milk secretion. Abortion is also very common in pregnant animals. Death usually occurs within three or four days generally preceded by a marked fall of body temperature to a normal or even subnormal a few hours before the fatal termination. In non-fatal cases the temperature falls gradually after the crisis, and soon reaches the normal, but recovery is prolonged over weeks and even months, as a great deal of time is required to regenerate the greatly impoverished blood.

Chronic Type.—This form shows all the symptoms of the acute type, but in a milder degree. The temperature usually remains about 103degs., and never exceeds 105degs. F. There is loss of appetite, stoppage of rumination, constipation, and albumen in the urine. An anæmic condition of the blood, as indicated by the pale and bloodless mucous membranes, is also present, but hemaglobin is not usually excreted by the urine, hence the red water symptom is absent.

(To be Continued.)

DRY WEATHER FODDERS.

THE long drought has again shown the necessity for having more green fodders available with drought-resisting qualities. We have been satisfied to plod along with our favourite Guinea Grass and Para Grass. While these will always be the mainstays for green forage, we think there could always be a reserve in cultivated paddocks of drought resisting fodder plants. The Sorghums all possess this quality. In last Journal we wrote about Guinea Corn (which is a Sorghum) but there are other kinds of Sorghums grown for fodder and not principally for the seeds, and it is surprising indeed how much dry weather they can stand, when after three months steady dry weather they are cut they begin to grow again without rain. For several hundred head of stock, however, it would require rather an extensive paddock, but the question to ask is simply whether it is better to lose the stock or grow enough fodder to keep them from dying of anæmia. After a spell of drought and consequent scarcity of grass the stock left alive take months to come round again, and we also lose much in the poor condition of calves. Now if we spend some money in putting in some green crop in the months of August or September this will be a safe-guard to some extent. The grass called *Paspalum Dilatatum* has become a great favourite in this connection since the great three years drought in the Colonies of New South Wales and Victoria, though it does not seem to have taken so well in other Australian States. It is likely it would do here, however, and we know of one small plot which has kept green through the dry weather while the grass and other vegetation around became brown and withered.

Then there could be patches of that luxuriant plant the "Velvet Bean" which can stand long spells of dry weather when once it gets a start. There is also Beggar Weed or "Tropical Clover,"—(Desmodium Mallir). This is a fine forage and re-seeds itself. It grows wild in Jamaica, but it was taken up in Florida and cultivated until it has become not only a favourite leguminous plant for enriching the soil, but also a splendid fodder plant. Years ago an attempt was made to introduce varieties of the Australian Salt Bush, desert-loving plants which are very much liked by stock, but very little attention was paid to them. All the same, a dry rocky hillside covered with these and held in reserve would cost nothing and would come in very useful in a drought.

The following is a description of some of the drought-resisting plants recommended for forage ;—

Beggar Weed or Tropical Clover (Desmodium Mallir). This plant stands dry weather exceedingly well, and grows from a small

seed which would cost 3s. per lb. here in small quantities. It grows on any kind of soil. and is especially suitable for sandy soils. It is a great nitrogen gatherer, and leaves the land much enriched after a crop. It grows to a height of two feet and over, and does not ratoon when cut, but when allowed to mature, drops seed which readily grow of themselves. For fodder purposes it requires to be planted thickly to keep the stems thin and succulent, else they grow hard as reeds. *It may be planted through corn, and at the time* the corn is taken off will have grown two or three feet high. On rich land it grows as tall as corn. As a green forage and hay producer few plants can beat this. As a muscle-making food it is better than Timothy Hay. Horses, cows, hogs and poultry are also fond of this plant. It can be cultivated for hay. Its growth is extremely rapid if it gets a good start. Eight to ten pounds of seed are required to plant an acre.

Sorghums or Guinea Corn.—If Guinea Corn is planted closely it will produce a great amount of green forage per acre, and can be cut several times during dry weather, and still make a further growth. Guinea Corn is a variety of the Sorghum family, but as mentioned above there are other varieties grown more for forage and which are more productive for this purpose. Four to six quarts of seed will plant an acre thickly, and the price runs about 12s. a bushel here for imported seed.

Australian Salt Bush.—Probably this plant stands more dry weather than any other. It needs some little moisture to start it in its growth, but less rain will do so than any plant we know, and it will make a strong growth during the hottest and driest weather. The plant has a spreading habit, branching freely, and making a thick matting of stems and foliage 12 to 16 inches in depth over the entire surface of the soil. It cannot be pastured too closely as it will not grow again if cut or fed too low. The plant can be cut and cultivated for hay. The seed would cost here about 6s. per pound. For a poor dry bit of rocky soil presently lying in useless bush this would be the plant to grow as a reserve for dry weather. A couple of armfuls of the foliage per day would keep stock in fair condition.

Velvet Bean.—This is a leguminous plant which is largely grown in the Southern States. When it gets a good start it makes a most luxuriant growth, and grows quickly to a great length and covers the ground to a depth of one or two feet. It likes a light dry soil and gives a tremendous quantity of green forage per acre. The seed would cost about 16s. a bushel here. Of course if all these were once introduced and regularly cultivated the native seed would come much cheaper.

TOMATO PRESERVES,---Make a rich syrup ; when it is boiling drop in small tomatoes which have in little water and few seeds ; when they begin to grow soft add small pieces of lemon rind. If wanted rich cook till all is a thickened mass. If you want to seal, they n[illegible]

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GUINEA CORN.

THE long continued drought extending over a period from last November to the present time brought home to me more than anything else the necessity of growing some food or fodder to help out the shortage of feeding of stock in times of drought, and I know of nothing so easily grown and of such general utility as Guinea Corn. Unfortunately both large and small proprietors have within the last few years given up the cultivation and to such an extent is this case that within the last year or two it is impossible to procure seed for planting. I can well remember in the late sixties and early seventies of the last century when I was quite a lad, in the months of January and February if you rode or drove along the roads in this district passing through the villages of the peasantry you would not be able to see a house, only a winding track leading from the gate of each holding; every plot, big or little, was in standing Guinea Corn and White Sugar Beans, and everyone had his corn-store made of round sticks and thatched with grass, raised about three feet off the ground, and standing near the house a mortar hollowed out of a good sized piece of lignumvitæ in which they used to made hominy and flour, and I must say the labouring people were much better fed and stronger than they are now. Guinea Corn can be grown on almost any soil, I know of land in the district that will grow nothing but "wild ochro" that has given a splendid return in Guinea Corn. Planting should be done by the end of August, the land no doubt would be better if it were forked or ploughed, but this is not altogether necessary. The usual way is to make roads about four feet wide by hoeing the grass and weeds into alternate rows, and plant the seed in the clean row by making one or two chops with a hoe about three feet apart drop say a thimble full of seed, covering with the foot ;as soon as the corn is about a foot high you should then single out, by pulling up with the hand, leaving four of the strongest and healthiest plants, pressing back with the foot the soil round the roots, and any gaps in the field can be made good by planting the missing holes with those thinned out. A wet day should be selected for this work if possible, any way no harm is done by waiting for rain to do this work as the transplanting can be done even when the plants are two to three feet high. Ants sometimes give trouble by by eating the seed in the ground; this can easily be cured by soaking the seed in water over night with a few chips of "Bitterwood" in the water. One or two weedings and at the same time moulding round the roots complete the cultivation, and by the end of February or at latest March of the following year the crop should be reaped. Now, one of the many advantages of Guinea Corn is that it ratoons profitably, in fact a first and second ratoon is some-

times better than a plant crop. When the crop is ready to be taken in the ears should be broken off the stalks and the stalks left standing till the following August or September. When they should be cut close into the ground with a sharp cutlass and the roots covered over with earth. For these that can afford a mule or horse, this might be economically be done by a one-horse plough.

G. D. MURRAY.

Race-Course P.O., Vere.

THE CRUELTY OF JERKING THE REINS?

PULLING violently, and especially jerking the reins, is a too common practice with busmen and drivers of horses, and as they probably do it more out of ignorance than sheer brutality or spite, it is well they should know the practice is a most harmful as well as painful one, both as regards the temper and the physical structure of the horse. A French expert, Baron Henry, d'Anchald, has published the results of his observations on the painful effects of the practice of jerking the reins. "We are apt to forget," he writes, "that this mouth, which serves as the medium of communication between us and the animal, should never be subjected to rough treatment or shock if it is to reman sensitive and beautiful, as it undoubtedly is; that this mouth becomes bewildered and uncertain, so to speak, and hard under stupid and violent treatment. the jerking of the reins rendering the animal indocile, sullen, and stubborn,"

The details of M. d'Anchald's experiments we have no space to go into here, but, to appreciate more nearly the intensity of the pain caused by the jerking of the reins, it need only be remembered that the cannon of the bit, which is more or less thick and round, rests upon a very small part of the membrane, which is delicate, very nervous, and is itself the envelope of a tolerable trenchant bone. If one can imagine, therefore the effect of a 33lb. weight (so M. d'Anchald calculates the pressure) falling on one's toes from a height of, say, 15 to 20 inches, one realises to some extent the pain which is inflicted on an unfortunate horse by this always brutal jerking of the reins. Not only is jerking of the reins useless in itself, but it is also most harmful, especially to young horses, as it comprises their future value and usefulness. In addition to that, the pain caused by it involves a loss of energy and causes fatigue, which soon uses up the animal. A flick of the whip applied to the hind quarters, or the withers, for example, should be all that is needed to stimulate the horse to fresh exertion."—*Garden and Field*

CHILI SAUCE.—Thirty ripe tomatoes, ten onions, six green peppers, two cups sugar, five tablespoonfuls salt, one pint vinegar; peel tomatoes and cut; chop onions; boil two hours.

POULTRY.

Roup.—In dealing with the diseases of poultry we treated last month of Yaws in Chickens ; this month we treat of Roup. Roup is caused by a chill in some way or other. It may be through fowls being exposed to long continued wet, such as sitting below a house on cold wet ground or roosting on a clammy, wet roost, or being confined in a dirty house, breathing foul hot air, or through being exposed to cold breeze at night after a hot day. Roup takes different forms; but as a rule it begins with a slight watering of the eye. If this is neglected the nostrils begins to choke with a cheesy, yellow matter which often works up through to the eye which then becomes swollen, and if still neglected the eye may be eaten out. If taken in time when the watering of the eye is first observed, by putting one drop of Jeyes in water or a pellet of Permanganate of Potash (which makes Condy's Fluid) and bathing the eye—preferably treating the fowl in the morning when the sun is out, three or four applications will check the roup. The nostrils should also be treated in the same way, squeezing out the matter lightly. Often the mouth becomes affected too with the matter passing through the nostrils. If so the beak should be cleaned out with the fore finger or with a piece of fine cloth, dipped in the disinfectant named. Sometimes a sudden chill causes the fowl to develope a rattling in the throat. The only way to treat this is externally with Tincture of Iodine with a feather or small Camel Hair Brush. The "ball" of the throat is painted with the tincture for two or three days which draws out the inflammation and effects a cure.

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Diptheric Roup or Canker.—There is a very nasty disease in poultry called Diptheric Roup or Canker. This is a whitish-yellow cheesy growth in the mouth spreading down the throat and smelling badly. When a fowl has this trouble it is best to kill it, as even drinking the same water as the other fowls will spread the trouble. We have treated a valuable imported rooster for a period of three months, every morning taking off the growth with the finger, or a sharp stick, and at the same time washing out the mouth with Permanganate of Potash in water, yet without curing the trouble. Sometimes the beak has been washed out twice a day and in a few hours the growth had again appeared. Even painting cautiously with Tincture of Iodine did not seem to destroy it. So, obviously it is better just to kill the fowl. When treating fowls for Roup a dose of Epsom Salts in water should be given twice a week. This can be given by dissolving a tablespoonful of Epsom Salts in a quart of water, and putting this down for all the fowls ; or it can be made sure that a particular fowl is taking it by giving

it some of the liquid in a teaspoon. In this case four teaspoonsful of the above strength would be a dose. For this trouble Epsom Salts is a better purgative than Castor Oil.

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DUCKLINGS.—When ducklings disappear in the day time we blame mongoose or hawks, but it is often the apparently inncoent 'John Crow' that is the cause. If the ducklings disappear during the night we should certainly blame rats. These are all troubles that can be understood, but what appears to puzzle many people is the sudden collapse of the ducklings in the day time—they suddenly turn round as if giddy, fall down and die. Now in nature ducklings are not much exposed to strong sunshine. They lurk in the shade, and one of the causes of the collapse is exposure to sun. This is aggravated by a heated condition of the blood through feeding on cornmeal. Cornmeal is not a bad food, but when it is fed alone, and all the time, the ducklings cannot thrive on it. Table scraps are better to feed ducklings, and these can be mixed with cornmeal. A variety of food, however, is necessary, and as in nature ducks are largely feeders on animal food, some such must be provided for the ducklings. It is not necessary to feed beef or other expensive food, for a few minutes digging in a damp place every morning will provide enough worms for the ducklings to get a good start for the day. The same plan as suggested in last Journal for feeding young turkeys—that is burying bones—can be followed for feeding the ducklings. When they are dug up after a week they are filled with maggots which the ducklings enjoy. Another cause of death is allowing the ducklings to have access to water to swim about. This would not matter so much during the day, but they get draggled in the evening, when the sun goes down, and the air gets chilly. At that time the mother duck does not sit upon them as a hen does her chickens ; after dark she begins to move about and leads her ducklings into water again. In the morning they have a huddled up appearance and during the day die. Strong broods get through all these troubles, but unfortunately people are careless about inbreeding, and the ducklings do not start off with enough stamina. It is a strange thing indeed that people will not exercise care in getting fresh blood, but allow ducks and drakes of the same brood to breed together.

HONEY.

JAMAICAN AND "BRITISH" HONEY.—The trade papers in the United Kingdom are voicing the grievance of apiarists who complain that the best Colonial Honey is being put up and labelled "British Honey," and they say that Colonials claim that it *is* British Honey. In one sense it is, but in the trade sense it is not, All we can say about Jamaica is that it never leaves here labelled so. Not that we would not be proud of the term British, but

we are content with the designation "Jamaica Honey." Our honey is one product we can be somewhat proud of, for not only do we stand high in quantity, but we are first in the list of British Colonies for quality. The chief characteristics necessary to render honey suitable for the British market are flavour, colour and clearness, flavour being most important. Our best honey has all three to a remarkable extent, although the clearness could be bettered by more careful straining. The very best honey should be very clear, very sweet, but without any pronounced and distinctive flavour (such as the Eucalyptus Honey of Australia has,) and should be very clean, and without any specks discernable in the body of it. Clear amber honey is the next in grade, but dark honey is regarded as much inferior. Honey is used in Great Britain both for manufacturing purposes and a table delicacy. Next to the home supply of the United Kingdom, California is the chief source of supply of a table honey put up in jars which are considered more suitable for this class of trade. Jamaica honey comes next, but the bulk of it is used for manufacturing purposes. For this branch the most suitable packages are casks and barrels. A certain proportion of clear Jamaica honey also goes in the British market packed in cases for table use, It is this honey which is often put up in jars and labelled after it reaches the United Kingdom, matters with which we in Jamaica have nothing to do. All the same it should be labelled Jamaica Honey.

COMMENTS.

MEMBERS Subscriptions to the Society are now due.

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JOURNAL.—We regret the delay in issuing the Journal. One consolation has been the number of letters we have received concerning its non-appearance, showing that it is missed, and which compelled us to insert an advertisement in the daily and weekly newspapers giving explanation. There was more printing work in hand than printing offices could execute promptly, and there was an advance in the cost of printing. Our limited funds could not produce a Journal at any cost. We are arranging for a new contract and trust that the rates will be moderate enough to allow us to issue a Journal of the same size as before the earthqnake. The delay has been galling to us ; we had abundance of matter. and much to write of the current seasons work.

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BRANCH SOCIETIES.—We cannot issue Journals indiscriminately. We go according to the list sent us; and these must of course be renewed every year, and any changes advised us during year. Alterations should be advised by letters, and not simply appear in the Branch Report trusting to their being extracted. These go to the Printer. Mistakes occur in this way.

Drought.—We have gone through a most severe, prolonged, and general drought. Every industry has suffered except coffee, the crops of which will be on the whole the best in five years, according to our summary of reports. Cattle have probably suffered worst, for while we have had scattered showers all over, which have been enough to renew growth in cane, bananas, cocoa, coffee, pimento and provisions, the rain so far has only provided a short bite for cattle. and has not added apparently to the water supply of those districts depending upon tanks and ponds for water. There was very little corn reaped from the "fall" crop owing to the drought starting early in November ; what was planted in January, February and March was burned out—except in cool glades,—and April planting suffered so badly that very little return will accrue. This will be a big hardship, for horsestock must be fed and imported corn is a dear article always in country parts. Provisions will be very scarce for a year to come, and much hardship will ensue all over the island, because all kinds of imported food stuffs will be dear also. Drought has prevailed in all the neighbouring West Indies. In North America a cold wet spring has delayed planting so much that there is likely to be a great shortage of corn and wheat in this year's crops in Canada and the United States. We have advised to the Branch Societies, the planting of such quick-growing food crops as Sweet Potatoes, and Black Eye Peas, even the common Cowpea, as substitutes in some way for yams and corn. They are sure growers, and will sell well in all local markets. Fortunately with the showers the bananas are coming on with a rush, and if the price for export is small, as usual after June, by September there will be abundance for local food supplies.

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Para Rubber.—The second edition of Mr. Herbert Wright's book on Hevea Brasiliensis or Para Rubber by A. and M. Ferguson, Colombo, Ceylon,—its Botany, Cultivation, History and Diseases, as will be seen from our advertisements, is now on sale in Kingston, and we direct the attention of all interested in rubber to its pages It is sold at Hylton's Times Store. Buy it and be well informed on the subject.

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Pigs in Sickness.—The article on this subject which appeared in April issue of the Journal has been reprinted and is now obtainable in pamphlet form.

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King's Bull' 'Sylvester.—Applications are desired for the use of the King's Bull "Sylvester" which is at pretent stationed with Mr. Malcolm at Knockalva. It is in splendid health and condition. Terms may be had on application to the Secretary.

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Formalin.—We have had some correspondence *re* the paragraph on our experiments with Formalin which appeared in April

Journal. The paragraph should be read in connection with the previous reference, which dealt with the experiments carried through by the Board of Agriculture in England, and which apparently proved that Formalin preserved such very perishable fruits as strawberries, cherries, even mangoes,—bought at Crystal Palace Exhibition,—from immediate decay. Our paragraph clearly stated that we thought we had discovered an important point in connection with Farmalin that might be beneficial to our orange trade, but also stated that our test was not on a large enough scale nor under shipping conditions. Thus until we can make a further test it would be injudicious to mention what the discovery is. We wished correspondence on the subject and have secured it. The orange season does not commence till August. and when we get green oranges enough, we have arranged for the experiment being carried on. We were disappointed that so very little public interest here should have been taken in the result of the English experiments, considering how much a cheap, expeditious, and effective way of preserving oranges and mangoes, etc., would mean to us.

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RAINFALL.—Mr. G. W. Fitz-Herbert, of Park Hall, Pratville, writes :—"It may interest you to see the following. The average rainfall on this property for the last four years has been for March 6.71 inches, and for April 8.75 inches, this year the March rainfall was .27 inches, and in April not one part was measured. The drought is telling very seriously on the prospects both on coffee and pimento, and the poor people have now to go long distances for water, their being no public tank here, and the small ones being all dry. Showers have fallen near here, but none have come just here."

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COUNTRY FIRES LAW : AN IMPORTANT ALTERATION.—In our issue for April we had occasion to refer once again to the dangers attendant on the careless use of fire, as there had been several rather serious conflagrations on cane estates and amongst small settler's provision grounds both in St. Thomas-in-ye-East and Vere. Previously when such fires occurred and damage was done to private lands the person whose property was destroyed could have recourse to law, his case being practically a Crown action as it was taken by the police. Our attention has now been directed to an alteration which has been made with regard to the granting of free process under the "Country Fire Law," in which the Government have instructed the police not to grant this privilege. Mr. A. C. L. Martin, Great Valley, Cross Keys P.O., writing on the 7th May, says :—"I do not know if you are aware that the Government have instructed the police not to grant free process under the Country Fires Law ; of course this will make what was a most useful Law a 'dead letter,' as very few people will take the trouble to prosecute. A few months ago before the Circular was sent round, whenever a breach of the law occurred all one had to do

was to inform the police and they took action and had the aggressors prosecuted, but now they have ceased to do so. Within the last two months I have had eight Bush Fires, and I got conviction in every case, in one case I had 40 acres of Guinea Grass burnt, 400 Pimento Trees and about the same number of Logwood besides fruit and timber trees. I hope the Government will reconsider the matter and instruct the police to prosecute in all cases."

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COCONUTS IN CAYMAN.—The Commissioner of the Cayman Island, Dr. Geo. S. S. Hirst, states that during the last eight months the husks of over two million coconuts have been thrown into the sea in these Islands. It is a pity that machinery for making coconut fibre (coir) could not be introduced, but failing that,—what great waste of good manure has been perpetrated! These husks could have been used as a manure for the coconut trees if for nothing else, but if piled in heaps and rotted they could have been used for manuring any kind of crop at all. Here in Jamaica we are wasteful enough of much that could make manure, but we do not waste the coconut husks like that, we use them on the coconut trees.

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PRIZE HOLDINGS.—On Saturday, 26th April, an interesting meeting of the Branch Agricultural Society of St. Ann was held at Claremont, the President, Mr. Roxburgh, being in the Chair. The business of the meeting was the distribution of the awards won by the successful competitors in the Prize Holding Scheme in the neighbouring districts. After an address by the Chairman, Mr. Arnett, the Local Instructor, fully explained the working of the Scheme. The Director of Public Gardens, and the Hon. H. E. Cox also addressed the meeting, and the awards were then distributed by the Custos. Revd. Lockett proposed a vote of thanks to Mr. Cox, who in reply proposed a similar vote to Mr. Roxburgh for presiding. A meeting for the same purpose was also held at Brown's Town, St. Ann, on 8th May, the Revd. Dr. Murray, presiding. Mr. Fawcett distributed the Prizes. On Friday, 10th May, a meeting was held at Albert Town, in Trelawny, Mr. Barclay presiding in the absence of the Hon. Revd. W. M. Webb. Mr. Fawcett spoke and distributed the Prizes. On Saturday, the 11th May, the last of the interesting series of meetings was held at Falmouth, Trelawny, the Hon. L. C. Shirley, Custos of the parish presiding. The Hon. and Revd. W. M. Webb, M.L.C., distributed the Prizes.

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CARAVONICA COTTON.—We submitted the first sample of Caravonica Cotton grown here to Messrs. Wolstenholme and Holland, Cotton Brokers, Liverpool. It was a mixture of different growths, *some grown at an elevation, and some on the lowlands, so could* not be considered a very good sample. The report, however, is very favourable, as follows :—" The sample is semi-rough, strong,

and generally fair length, but containing some irregularity. During the present scarcity of long stapled cottons, it would be worth 9½d. and 10d., and the value would be regulated by the price ruling for Egyptian, and extra stapled American." So far Caravonica Cotton has proved a strong-growing plant, a perennial, ever-green, and apparently ever bearing, with blossoms and ripe bolls on it almost all the time. It is worth further and more extended trials. But it should never be planted close to Sea Island Cotton in cultivations where the resulting seed of either may be kept for planting. Better always to get seed for planting direct from this Office.

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HALF-YEARLY MEETING.—The Half-Yearly General Meeting was held on Thurday, 20th June, at the Office, 82, Hanover Street, Kingston, after the meeting of the Board of Management. Owing to the Legislative Council being in Session, and engaged in urgent business, connected with the Imperial Loan and Grant, the new Building Laws for Kingston, and the choice of sites for the new public offices, His Excellency the Governor could not take the Chair as President, and no fewer than six members of the Board of Management were engaged at the Council, three were off the Island and one was ill. The Half-Year y Report and Statement of Accounts will be published in next Journal.

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INSTRUCTORS.—At the meeting of the Board of Management held on Thursday, 20th June, a report of the Instructors' Committee was adopted. It recommended that the parishes of St. Catherine and Clarendon be formed into a new district, thus relieving the other Instructors of part of their too extensive districts, that the balance of the Elder, Dempster & Company money for Instructors not yet allocated, to spread over three years, thus allowing £200 a year to be paid to an extra Instructor, and that Mr. J. Hirst be appointed Instructor. Mr. Hirst address is Mocho P.O., the Branch Societies in these two parishes have been advised of his appointment, and he has been directed to arrange his itinerary with the Secretaries. The whole Island is now covered by Instructors, and there ought to be continuity, system and vigour in the work now. And there never was a time where more effort was required to encourage steady people in their agricultural work. There is a temptation to throw up the steady, ding-dong labour, the never ending round of work always pressing to be done on cultivations, to go to work in Kingston, or Colon, or Port Limon, Cuba, Mexico, Nicaragua,—anywhere where apparently big wages are offering. Whatever may be our planterss opinion of our labour supply—and they are varied—it is certainly wanted elsewhere. But beyond a few women to Port Limon and Colon, it is men who emigrate. What then becomes of the women and children ? They are here, and available for work if they can get work suitable for them. Cotton picking is suitable work for them if we had the cotton fields. It is our endeavour to get the fields of

cotton in all the dry parts. At the same time the men away do not forget their women folk. Remittances pour in, and so the Island benefits in some way.

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COTTON AND DROUGHT.—In spite of drought from the second week of November an acre of Sea Island Cotton, planted in lower St. Andrew, nearly a month later than is advisable, that is on 17th September, instead of as near the 15th of August as possible, has given first-class results. It stood the dry weather perfectly, has given a large crop, of good quality and is still in excellent condition, ratooning. In cotton we have a drought-resisting crop, with a large market, and it should be one of the lessons of the long drought just finished, that the people in the dry lowlands can utilise their lands in a profitable export crop, and not depend alone on a little grass and stock, logwood and firewood, sweet potatoes, or even sugar. Tobacco is good, but needs choice localities and skilful treatment. Cassava is all right, but needs machinery to make starch, but cotton is certain and simple, with due precautions against caterpillars. These precautions are simple and effective for our conditions if forethought is used, and will be treated of later.

BRANCH NOTES.

MOCHO AND BRIXTON HILL.---I regret very much to state that we have not had a meeting of this Branch since December, although due notice of meetings were given. We hold our meetings on the second Friday of each month alternately in the Brixton Hill and St. Paul's Schoolroom. If I get a meeting this month I shall send you an early report. I enclose a list of members of the Branch. Weather and Crops :---The drought in the district is still severe. Cultivation is at a stand still. No crop is expected this season.---J. AUG. RHODEN, Sec.

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TRINITY VILLE.---The Annual Meeting was held on Thursday, 14th March, 1907, at 4 p.m. W. A. Carr, presiding. The Agricultural Instructor, Mr. Briscoe, was present and spoke New office bearers were elected, and the rules of the Society amended to meet new circumstances. It was resolved that the money collected for the Show which had to be postponed should be lodged in the Savings Bank until such time as a Show could be held. It was unanimously agreed to grant the Secretary an honorarium of £1 for his good services.

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TRINITY VILLE.—Annual Report 1906.---The year under review was marked by the strenuous efforts which we made to have an Agricultueal Show in August. With the help of the Assistant Secretary I was able to issue a large number of circulars soliciting donations. The response to these circulars were not very generous, and when July was nearly run and we found that we had under £10 in hand we were forced to postpone the undertaking. Later on another attempt was made to hold the Show in February of this year, but this also failed. Even if we had raised all the money we needed we should have been compelled to postpone the Show on account of the earthquake on the 14th of January. During the year six regular meetings and four special meetings were held. The attendance at these meetings may be considered as fairly satisfactory, and it is only regretable that two meetings fell through from want

of a quorum. The membership of the Society stands at 73, against 60 in 1905. A very regretable thing is the constant complaint which members make regards ing the irregular manner in which they receive their Journals. It is hoped that with a revised list of members the Secretary of the Parent Society will be in a position to despatch such Journals to its proper owner regularly. (The Journals are despatched strictly according to list.---Ed.) The Treasurer's Report show that the Society is quite solvent. I am afraid that from pressure of work in other directions I shall not be able to continue the work of Secretary of this Society. I should not like the Branch to suffer through any inability of mine to grapple with the work. I must here record my appreciation of the valuable help given me by the Assistant Secretary, Mr. J. Edman. and I look forward to his doing the work successfully should he be elected to the post of Secretary. In conclusion I must refer to the order which has characterized all our meetings. Throughout the year a happy relationship between the Chair and the other members has been sustained, and I think this is a matter for congratulation.---E. S. EDWARDS, Sec.

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ÆOLUS VALLEY.---This Branch holds its monthly meetings every second Thursday in the month, viz., (9th being Ascension.) May 11th, June 13th quarterly, July 11th, August 8th. September 12th quarterly, October 10th, November 14th, December 12th last quarter. We are going through a serious time with severe drought, nothing can be planted ; nothing can grow. Plants parched and dried up, Shortage of food stuff all round.---R. A. JONES, Sec.

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ABERDEEN BRANCH.---The Annual Meeting of this Branch was held in the Moore Town Schoolroom on the 27th April, 1907, at 4 p.m. There were present : Messrs. J. E. Bailey, Vice-President, presiding ; S. P. Osborne, Treasurer ; H. W. Hay, Secretary, and nine other members. The minutes of the last meeting were read and confirmed, and the officers for the present year elected, as follows : Chairman, Revd. E. Leo. Jones ; Vice-Chairmen, Mr. J. E. Bailey and Mr. R. E. Harris ; Treasurer, Mr. S. P. Osborne ; Secretary, Mr. H. W. Hay. The next meeting will be held here on the 18th inst., to begin at 4 p.m. Future monthly meetings will be held on the second Saturday in each month. Moore Town as other parts of the island has been having its spell of dry weather. this has, however, been somewhat broken by a few light showers, in the early morning generally, during last week.—H. W. HAY, Sec.

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ABERDEEN.—This Branch met on the 18th of May, at 4 p.m., in the Moore Town Schoolroom. There were present : Mr. J. E. Bailey, Vice-President, presiding, the Treasurer, the Secretary, and ten other members. The names of four new members were enrolled, and some of those present paid in their subscriptions. Arrangements were made to meet Mr. Cradwick, the Travelling Instructor, on the 22nd inst. On the 22nd inst. at 10 a.m., Mr. W. Cradwick, Travelling Instructor arrived here. A meeting of the Aberdeen Branch was held with Mr. J. E. Bailey, Vice-Chairman. presiding. Several members were present. The presiding Chairman introduced Mr. Cradwick to those present, and that gentleman begin and gave a very interesting and instructive lecture. In his lecture the speaker dealt largely on the cultivation of cocoa, and the rubber plant, promising to visit, on his next visit, 10th Aug., cocoa fields, and to tap one or two rubber trees belonging to Mr. E. L. Massy, so as to determine the probable yield of that plant in this locality. The speaker next dealt with the importance of the jippi-jappa industry, and advised its introduction into this district. The meeting then decided to get a supply of rubber seeds and jippi-jappa plants to be distributed among the members of the Branch. A resolution to His Excellency the Governor expressing the Branch's appreciation of His Excellency's appointment was adopted unanimously. A vote of thanks to Mr. Cradwick was moved by Mr. Massy, seconded by Mr. Hay, and unanimously carried. Mr. Cradwick replied in suitable terms. The meeting then came to a

ST. MARGARET'S BAY.---The Third Annual Meeting of the Portland Central Agricultural Society was held in the Church Schoolroom, on Friday, 10th of May. The members present were:---Messrs. J. E. Silvera, Vice-President, in the Chair; J. S. Williams, Treasurer; Revd. P. A. Conahan, C. M. Harris, W. Mitchell, J. Gillespie, J. D. Brown, J. Napier, P. McGibbon, M. Moore, C. E. McCleary, W. Cradwick, (Travelling Instructor), Miss C. V. Conahan, and the Acting Secretary Mrs. A. Roper. The visitors were Messrs. M. Hill, and R. Williams. The minutes of the last meeting were read and confirmed. The Acting Secretaty presented the following report:---We began last year with a personel of 30 members, comprising 22 old and eight new members. The financial position of the Society at the end of the preceeding year was a credit of 9d., the membership then was 53. For 1906, year commences 1st April. The receipts of the Society from subscription and entrance fees were £1 14s. 6d., including the sale of two copies of rule books. The expenses of the Society for the year were, affiliation fee 5s., stationery 4s. 9d., secretarial expenses 3s. 1d., making a total of 12s. 10d. The Society's financial position now is a credit of £1 1s. 8d. With regard to the work of the Society during the year, I am sorry to say we have done nothing of importance. Only six meetings were held during the whole year, due partly to the indifference and negligence of members to attend the meetings, and partly from the unfavourable circumstances of an absorbing nature in the domestic relations of the Secretary coupled with the exacting nature of his profession. You may say that we had an Assistant Secretary, but the nature of his vocation compels him to be unavailable sometimes. And thus through a combination of unfavourable circumstances we have not been able to do anything of a substantial nature. It is said, "that the darkest hour is that just before daylight," and if that be true, which I believe it is, then this unfruitful year is a happy augury for the fruitfulness of the next, and I see no reason why it should not be so. If members will only make it a point of duty to be more responsive, regular, and interested, putting forward a little strenuous endeavour, I am sanguine we will realize much this year. The bright and hopeful feelings which I am entertaining for this year are intensified by the fact that we are about to place—figuratively speaking our ship in charge of a Captain whose ability and reputation for successful navigation is fully established. The Treasurer also presented his report of receipts and expenditure for the year ending 31st March, 1907. The Acting Secretary moved a vote of thanks to the retiring Secretary, Mr. C. R. Cunningham, which was seconded by Mr. J. D. Brown, and unanimously carried. The Acting Secretary was instructed by the members to convey their thanks and appreciation to Mr. Cunningham for the efficient manner in which he had conducted the Society's business during his term of office. The election of officers to serve during the ensuing year was held and resulted as follows:---Revd. P. A. Conahan, President; J. S. Williams and W. Mitchell, Vice-Presidents; J. S. Williams, Treasurer; Mr. Albert Roper, Secretary. As we had not a large attendance of members further election was postponed. The Revd. P. Conahan in order to revive the interest of the Society suggested that a Show be held. This was ably supported by Mr. W. Cradwick, who promised to do all in his power to help it to success. He suggested that a Committee be appointed to go into the matter. Thursday, 23rd inst., was fixed for the appointment of that Committee. A subscription list was at once started with Mr. W. Cradwick, 10s. 6d., Revd. P. A. Conahan, 10s. 6d., C. M. Harris, 10s. 6d. Several other gentlemen subscribed 5s. each. The meeting was brought to a close with prayer.—A. ROPER, Sec.

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SAVANNA-LA-MAR.—The Annual Meeting of this Branch was held on the 17th May, (postponed from 5th April), with the President, C. P. Bovell, Esq., in the chair. Owing to rain the attendance was small. The Secretary reported that the proposal to increase the membership subscription to 2s. per annum had fallen through, not having found favour with the other Branches in the Parish. The Treasurer reported that it had not been possible to prepare a correct statement of receipts and expenditure in connection with the Paradise

Show, but there was approximately a deficit of £13 10s., which had been partially met by a transfer of £5 10s. from ordinary funds, it was hoped that the outstanding liabilities would be considerably reduced by further donations. The retiring officers were all re-elected. Membership list presented showing 31 members in financial standing. A resolution welcoming the Governor was unanimously agreed to.---A. W. LEVY, Sec.

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SANTA CRUZ MOUNTAINS.—The 17th May was a Gala Day for the Santa Cruz Mountains Branch of the Jamaica Agricultural Society, for on that day Mr Palache in company with the Acting Secretary, visited, inspected and gave real, sound practical demonstration in the culture of coffee and other products to the members who are competing for the President's prize. It was a good hard day's work, for we started at eight o'clock, a.m., and with one hour's intermission, completed the work at 3.15 p.m. This shows that the work of the Instructor is not a mere flying visit, and should therefore be highly appreciated. At four o'clock the President opened the meeting with 15 members present. After the reading and confirmation of the minutes, Mr. D. R. Clacken and Mr. A. J. Halloway were enrolled as members. Mr. Palache was asked and gave instruction as to the time and method of cultivating Irish potatoes, and the making of seed-beds for coffee. It has been pointed out that some prominent gentlemen are discouraging the people by telling them that the whole agricultural scheme is a farce. It was agreed that Mr. Palache's report on the inspection of the competitors' holdings, be kept by the Society, so that in case he should no come next year to be the judge, the Society may have something to guide them in adjusting the prizes next year. Mr. Palache was then asked for an address. He dealt with the preparation to be made to meet the approaching prize holding for this parish in 1908-1909. He showed that one of the objects of this scheme is to test the success of the Instructors' labour. Among the facts laid down in the address he mentioned the following :---That a man can make his holding a Savings Bank by planting useful trees, and by mulching, manuring, etc. In illustrating this fact, he mentioned that one of the members of this Society showed him a cedar tree which he planted himself, and which the other day yielded him 350 feet of boards He assured the members that he would do his best, and if they would co-operate with him, success would come. The crude method of cultivation among the peasant class is due to Indolence, Independence, and Ignorance, and especially when a man is so ignorant as not to know that he is ignorant. He tried to impress on the members that every man should be ardent, ambitious, and assiduous, and although a prize might not be won, the improvement of the holding would be beneficial to the owner. The Treasurer took the opportunity of driving home the facts laid down by the lecturer. At the July meeting the lecture will be on the care of Horses and Cattle. After the usual votes of thanks the meeting was brought to a close.---N. E. SEAL, Sec.

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CENTRAL ST. ANDREW'S.---At a meeting of this Branch held in the Manning's Hill Schoolroom, on the 11th April, there were present : Messrs. R. K. Smith, Vice-President, in the chair, G. W. Byrnes, Charles Williams, William Douglas, Charles Douglas, Edward Hall, J. Briscoe, Agricultural Instructor, Revd. J. D. Purdy, and E. A. Edwards, Assistant Secretary. The principal business of the day was the amalgamation of the Branch with the Northern St. Andrew's. The latter was represented by the Revd. Mr. Purdy, and after some discussion the amalgation was effected. This done the next step, therefore was election of officers for the United Branch. The officers elected were Revd. G. D. Purdy, President, Messrs. R. K. Smith, Vice-President for Manning's Hill, G. W. Byrnes, Vice-President for St. Christopher's, T. J. Henry, Vice-President for Lawrence Tavern, Chas. Williams, Treasurer, Revd. G. A. Miller, Secretary for Lawrence Tavern, and Mr. E. A. Edwards, General Secretary. It was indeed a very enjoyable and beneficial meeting, and Mr. Briscoe the Instructor made very helpful suggestions which were highly appreciated. There is every reason to believe that the Society which has for a long time been in a state of lethargy is now brightening up.—A. E. EDWARDS, Sec., Stony Hill P.O.

HANOVER.—The Quarterly Meeting was held on Saturday, 18th May, in Lucea Court House. The Secretary stated that the 3,000 Jippi-jappa plants ordered from the Gardens had been received and paid for. A few members had not yet paid, but he expected to get the money in soon. The Hon. B. S. Gossett, member for Hanover in the Legislative Council has become a member of the Branch. The Prize Holding Scheme was being pushed by Mr. Mennell, and the judging would begin on August 12th., when Mr. Cradwick was expected. It was agreed to wish Mr. Caadwick success in his new sphere. It was resolved to welcome Mr. Olivier as the new Governor. There is a prospect of Arrowroot being supplied to the Government Institutions. Those who have planted it should communicate with the Secretary stating what quantity is expected, and when. The Secretary stated that he would be absent from Hanover during the month of June, July and August, and requested that the Assistant Secretary take over the duties. This was agreed to. Next meeting will be held on the third Saturday in August. The drought is broken. Showers have fallen which have done great good, everything has made a start.—JOHN F. GARTSHORE, Hon. Sec.

CORRESPONDENCE.

Malvern, 12th May, 1907.

MILDEW IN ROSES.---I observe in your Correspondence column of April Journal an enquiry by Mr. F. A. Cory as to best remedy for Mildew on Roses. Mildew is caused by an Oidium and attacks roses in most places, being conveyed as spores in the air, it, in my experience, especially favors highly cultivated roses, *i.e.*, highly manured and tilled. I have never seen it on roses that grow in the usual neglected condition in Jamaica gardens; certain roses are specially liable to mildew, viz., those that shoot with soft, succulent leaves, hard shiny well glazed leaves do not take mildew, thus Cath. Mermut, Etoile de Lyon, etc., amongst Tea roses are very liable to mildew, whilst in the classes Tea Roses are less liable to mildew than Hybrid Teas, and Hybrid Teas than Hybrid Perpetual.

In treating mildew it must be borne in mind that both sides of the leaf are affected, so that sprinkling sulphur on the leaves is of no use. the only method that is of use is to rub the sulphur on both sides of the leaf by taking the leaf between the fingers and thumb with some sulphur. Sulphur is the remedy used by English rosarians as being as useful as anything else, spraying preparations are no better.

In my experience mildew is worse in certain seasons where a rush of soft succulent shoots follows on the rest of a drought, and the only way to combat it is to remove the affected leaf and burn on the first appearance, once it has got hold of an entire shoot there is nothing to be done but wait until secondary shoots come on, the flowers and leaves on these will be all right.

I presume that Mr. Cory has learnt that Roses in Jamaica require different pruning to similar roses in England. *i.e.*, merely taking out dead wood or "bruising off" superfluous shoots, any heavy prunning here in my experience results in coarse soft shoots, imperfect roses and severe attacks of mildew with eventual death of the tree.---J. A. S. CALDER.

MILDEW.---The following information will be useful :---*By mildew we mean the white mouldy substance that appears on the leaves of plants and sometimes on fruits. Occasionally there are also blue moulds and brown moulds. but these are not usually termed mildew. The only remedy known for mildew is flowers of sulphur or the more finely divided green sulphur dusted over the leaves or fruits---preferable with a puff. If a wet spray is needed* Sulphide of Potassium *can be used---1lb. of the chemical to 48 gallons of soft water. As a rule, however, the sulphur dust will be found to be the best. Sulphide of Potassium must only be mixed as used and cannot be left over until the next day as by exposure it takes up the oxygen and becomes dangerous and useless at the same time.---Ed.)*

Port Maria, 8th May, 1907.

I have to ask what I may use in preventing Rat-Bats from destroying young coconuts from off the tree.---J. A. LAWRENCE.

(Can any reader say ?)---Ed.

STALLION SIR GERALD.---I am glad to inform you that both my imported Hackney mares have foals for him. "Helga" has a horse-colt, and "Virginia" has a filly-colt, any time you care to go to "Grove" Busy Park Station you can see them by dropping a line to my overseer, (Mr. V. O'Sullivan), as I am leaving for England on the 28th.---E. VERLEY.

COTTON NOTES.---In a letter under date the 7th May, received from Mr. J. M. Lewis, of Yallahs, the following occurs :---"It is certainly gratifying to note that my efforts in this direction (cotton-growing) have been recommended, and the circumstances of the case taken so fully into account as to justify your recommending that the second prize offered by Sir Alfred Jones be awarded to me, and this will encourage me to plant more cotton this year with the hope that weather conditions will be more favourably, and lead to success. I find Caravonica Cotton a hardy plant, it seems to withstand drought better than Sea Island, and I quite agree with you that the silk-cotton in particular is well worth further attention."

ARROWROOT.---Last October you published in the Agricultural Journal an article on Arrowroot and "Tous-les-mois." I was sufficiently interested in the latter to try experiments ; I have about an acre in cultivation. I have made a little starch, and have sent a sample to our agents in London, who have reported favourably on the quality, but place value at only £10 per ton, which could not pay me to take up the industry. I have sent you a sample of the starch, and would be glad to have your opinion.---A. H.

(To our mind the sample is good,---it is dry and crisp, it is clean and pure, but you must bear in mind that the starch product of "Tous-le-mois" is darker than the arrowroot of commerce which is the product of what settlers call here "white" arrowroot, whilst "Tous-le-mois" starch they call "black" arrowroot. Now commerce is conservative, and although we here believe that "Tous-le-mois" starch is a better edible, the market goes by custom, and whiteness is the superlative quality wanted.---Ed.)

Department of Agriculture, 11 Parade Kingston.

I shall be glad if you would kindly insert in your following Journal, re vegetables grown by R. A. Clare, Esq. On my visit to this gentleman's property at Mount Hermon, Cambridge District, in the Port Royal Mountains, I was greatly surprised to find that he had Beet-roots and other vegetables growing, and looked almost as if they were growing in England, many of the Beet-roots weighing one and three-quarters pound, and some over two pounds, and a splendid shape. Mr. Clare informed me that he sells them for as much as 3d. each. I may mention that these Beets were only eleven weeks old, from the seed was sown. Mr. Clare allowed me to take two of them to the meetiyg to show the other members of of the district what can be done by cultivation. I may mention that the seeds were purchased from Peter, Henderson & Co., New York. At the meeting several members were asking about seed Irish potatoes, and said although the drought had been so severe they had got good returns. I expect to get a large order from the November planting for this Branch.---J. BRISCOE, Agricultural Instructor.

LIST OF BRANCH SOCIETIES.

Name of Branch.	Secretaries.	Post Offices.
Aberdeen ...	H. W. Hay ...	Moore Town.
Æolus Valley ...	Robt. A. Jones ...	Yallahs.
Annotto Bay ...	H. B. Braham ...	Annotto Bay.
Appleton ...	Geo. Romtallie ...	Siloah.
Balaclava ...	A. A. Doran ...	Balaclava.
Bath ...	Rev. D. D. Parnther, B.A.	Bowden.
Black River ...	A. A. Kennedy, B.A. ...	Black River.
Cambridge ...	R. A. Clare ...	Gordon Town.
Clarksonville ...	Saml. E. Hall ...	Cave Valley
Cornwall (Central) ...	E. S. Jarrett ...	Ipswich.
Clarendon, (North-East) ...	W. B. Hannan ...	Croft's Hill.
Clarendon, (Mid.) ...	S. Algon Johnson ...	Four Paths.
Christiana ...	Revd. Dr Turner ...	Christiana.
Duan Vale ...	E. P. Hawkes ...	Clark's Town.
Deeside ...	R. R. McBayne ...	Deeside.
Davyton ...	J. Thos. Hemans ...	Williamsfield.
Fairfield ...	H. E. Wright ...	Spur Tree.
Fair Prospect ...	W. Z. Buckley ...	Priestman's River.
Hanover ...	Rev. Jno. F. Gartshore ...	Flint River.
Hampstead ...	E. Saml. Exell ...	Hampstead.
Hampden ...	I. Lawrence ...	Hampden.
Lamb's River ...	P. A. Smellie ...	Lamb's River.
Manchester, (East Central) ...	W. M. O'Meally ...	Mandeville.
Manchioneal ...	L. R. McBean ...	Manchioneal.
Mocho and Brixton Hill ...	J. A. R. Rhoden ...	Mocho.
Newmarket ...	A. E. U. Shakespeare ...	Newmarket.
Ocho Rios ...	L. C. B. Yeoman ...	Ocho Rios.
Pedro ...	W. J. Francis ...	Pedro.
Port Maria ...	E. L. Bartlett ...	Port Maria.
Porus ...	W. A. Morgan ...	Porus.
Port Royal Mountains ...	C. L. A. Rennalls ...	Mavis Bank.
Portland, (Central) ...	Albert Roper ...	St. Margaret's Bay.
Red Hills ...	J. A. Wallen ...	Belvidere.
Rio Minho Valley ...	U. Thos. McKay ...	Frankfield.
Retreat ...	J. I. Dixon ...	Retreat.
Savanna-la-Mar ...	A. W. Levy, B.A. ...	Savanna-la-Mar.
Springfield ...	D. A. Smart ...	Point.
St. Ann ...	J. C. McIntyre ...	Claremont.
St. George's ...	Revd. W. J. Thompson ...	Buff Bay.
St. John's ...	S. A. Banton ...	Guanaboa Vale.
St. John's Upper ...	W. T. Edwards ...	Point Hill.
St. Peter's ...	J. Ed. Simms ...	Petersfield.
St. Andrew, (Central) ...	E. A. Edwards ...	Stony Hill.
Sergeantville ...	J. O. Rennalls ...	Bog Walk.
Santa Cruz ...	S. A. Blythe ...	Santa Cruz.
Santa Cruz Mountains ...	John Stewart ...	Malvern.
Trelawny, (Upper) ...	J. D. Easy ...	Albert Town.
Trinity Ville ...	E. S. Edwards ...	Trinityville.
Thompson Town ...	W. A. Bryan ...	Mocho.

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